

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning on Page 4, line 33, and ending on Page 5, line 4, with the following amended paragraph:

Referring to FIG. 3, an inorganic electroluminescent device according to a second embodiment has a stacked structure in which a transparent electrode 21, which is formed of transparent ITO, and a first electric field enhancing layer 71a, which characterizes the present invention, are sequentially formed on a substrate 11. A first dielectric layer 31 is formed on the first electric field enhancing layer 71a and an inorganic light-emitting layer 41, in which electric field enhancement occurs, is formed on the first dielectric layer 31. Also, a second dielectric layer 51 and a back electrode 61 are sequentially formed on the light-emitting layer 41, and a second electric field enhancing layer 71b, which also characterizes is another aspect of the present invention, are present between the second dielectric layer 51 and the back electrode 61. Further, a protective layer (not shown) is formed on the back electrode 61 to shield the stacked structure from the outside. In the second embodiment, it is preferable that the first electric field enhancing layer is formed of a transparent material, since it is formed adjacent to the substrate 11 through which light passes.

Please replace the paragraph beginning on Page 5, line 7, with the following amended paragraph:

Referring to FIG. 4, an inorganic electroluminescent device according to a third embodiment has a stacked structure in which a sandwich structure, in which electric field enhancement occurs, is present between a first substrate 12 and a

second substrate 82. More specifically, a transparent electrode 22, which is formed of transparent ITO, is formed on the first substrate 12 and an inorganic light-emitting layer 42, in which electric field enhancement occurs, is formed on the ITO electrode 22. A dielectric layer 51 and a back electrode 42 are sequentially deposited on the light-emitting layer 42, and an electric field enhancing layer 72, which characterizes is another aspect of the present invention, is present between the dielectric layer 52 and the back electrode 62. It is preferable that the ITO electrode 22, the light-emitting layer 42, and the dielectric layer 52 are sequentially formed on the first substrate 12, and the back electrode 62 and the electric field enhancing layer 72 are sequentially formed on the second substrate 82. Next, the first substrate 12 is combined with the second substrate 82 in order that the dielectric layer 52 on the first substrate 12 contacts the electric field enhancing layer 72 of the second substrate 82.

Please replace the paragraph beginning on Page 5, line 24, and ending on Page 6, line 11, with the following amended paragraph:

Referring to FIG. 5, an inorganic electroluminescent device according to a fourth embodiment has a stacked structure in which a sandwich structure is present between a first substrate 13 and a second substrate 83, as shown in the electroluminescent device of FIG. 4. More specifically, a transparent electrode 23, which is formed of transparent ITO, is formed on the first substrate 13, and a first electric field enhancing layer 73a, a first dielectric layer 33, and an inorganic light-emitting layer 43, in which electric field enhancement occurs, are sequentially formed

on the ITO electrode 22 23. A second dielectric layer 53, a second electric field enhancing layer 73b, and a back electrode 62 are sequentially formed on the light-emitting layer 43. It is preferable that the ITO electrode 23, the first [f] electric field enhancing layer 73a, the first dielectric layer 33, the light-emitting layer 43, and the second dielectric layer 53 are sequentially formed on the first substrate 13. Also, the back electrode 63 and the second electric field enhancing layer 73b are sequentially formed on the second substrate 83. Next, the first substrate 13 is combined with the second substrate 83 so that the second dielectric layer 53 of the first substrate 13 contacts the second electric field enhancing layer 73b. In the fourth embodiment, the first electric field enhancing layer 73a is formed adjacent to the first substrate 13 through which light passes. Thus, it is preferable that the first electric field enhancing layer 73a is formed of transparent nano particles. In contrast, the second electric field enhancing layer 73b does not stand in the way of light and thus may be formed of carbon nano tubes or some other non-transparent material.

Please replace the paragraph beginning on Page 6, line 18, and ending on Page 7, line 21, with the following amended paragraph:

In an inorganic electroluminescent device according to the present invention, when alternating current (AC) voltage is applied to a transparent ITO electrode and a back electrode, a strong electric field on the order of MV/cm is generated at an end of the electroluminescent device, and electrons, which are trapped at an interface between a dielectric layer and an inorganic light-emitting layer, are emitted therefrom. Here, electrons tunnel through a conduction band of the light-emitting layer. The

electrons emitted into the conduction band of the light-emitting layer, accelerate in the electric field to obtain enough energy to excite the center of radiation of the fluorescent substance. Then, the electrons collide with peripheral electrons at the center of radiation to excite the peripheral electrons. The excited electrons, which were at a ground state, return to the ground state and as a result, light emission occurs by energy difference between two states. There is a possibility that some high-energy electrons may get knocked out of the fluorescent substance and then this substance is partially ionised to emit secondary electrons. Meanwhile, some lower energy electrons, including electrons that have lost most of their energy by collision or emission of radiation, may get trapped by the interface between the ITO electrode and the back electrode. When the polarity of the outer voltage changes, the above process is reversed. According to Fisher's principles (refer to Journal of the Electrochemical Society: Review and News, June 1971), the distance between a light-emitting layer and a dielectric layer is just several nm, that is, they are in pseudo-contact with each other. Therefore, electrons emitted from the light-emitting layer, i.e., an acute edge of a fluorescent device, are combined with holes, which are generated when voltage having opposite polarity is applied, and radiate light. In this case, the amount of holes is equivalent to that of electrons which are generated at the opposite electrode. Accordingly, the more electrons are formed at the opposite electrode, the more holes are combined with the electrons to radiate more light, i.e., the higher luminous efficiency. According to embodiments of the present invention, the surface of an electrode which contacts a dielectric layer is coated with a field-emission layer formed of a material having field-emission characteristics, e.g., carbon nano tubes or nano particles. Here, since the distance between the field

emission layer and the dielectric layer is just several nm, field emission occurs between the field-emission layer and the dielectric layer to generate electrons. The generated electrons are supplied to the dielectric layer. The field emission may occur in a material having fine pores or gaps which allow electrons to penetrate. This means that the dielectric layer is in pseudo contact with the field-emission layer or fine pores or gaps are present between the dielectric layer and the field-emission layer. The supply of additional electrons increases luminous efficiency and further enables an electroluminescent device to operate at low voltage and have a high brightness.

Please replace the paragraph beginning on Page 7, line 22, with the following amended paragraph:

Embodiments of the The present invention is are based on the electrical state of an electrode contacting a dielectric layer. Assuming that two opposite electrodes have the same amount of electric charges, when a high electric field is applied to the dielectric layer in order to form many electrons or holes at a surface of the dielectric layer contacting a light-emitting layer, many holes or electrons are formed at the other surface of the dielectric layer. As mentioned above, a surface of the electrode contacting the dielectric layer is coated with a field-emission material such as carbon nano tubes or nano particles. Therefore, with the distance between the field-emission layer and the dielectric layer being only several nm, field emission occurs between the field-emission layer and the dielectric layer. In this way, it is possible to

obtain a greater amount of electric charges at a surface of the electrode contacting the field-emission layer.

Please replace the paragraph beginning on Page 8, line 1, with the following amended paragraph:

As described, a small amount of electric charges are trapped in a surface of a dielectric layer, which contacts an electrode, in a conventional luminescent device. However, if the electrode is coated with carbon nano tubes as suggested by embodiments of the present invention, it is possible to trap a large amount of electric charges in a surface of a dielectric layer regardless of the electrical characteristics of the dielectric layer.

Please replace the paragraph beginning on Page 8, line 8, with the following amended paragraph:

FIG. 6 is a photograph showing radiation emitted from an electroluminescent device according to an embodiment of the present invention. Referring to FIG. 6, a Ni catalyst was applied onto a chrome electrode using sputtering. Next, an electric field enhancing layer was formed of carbon nano tubes and attached to a substrate using chemical vapor deposition (CVD). Next, a transparent electrode and a fluorescent layer were sequentially formed on another substrate. Then, the two substrates were separated from each other using a glass plate having a thickness of

0.2 mm, an AC voltage of 800 V with a pulse of 30 kHz was applied to the resultant structure to generate the radiation shown in FIG. 6.

Please replace the paragraph beginning on Page 8, line 17, with the following amended paragraph:

FIG. 7 is a photograph showing radiation emitted from an electroluminescent device according to an embodiment of the present invention, in which substrates the same as those described above were separated from each other using an aluminum substrate having a thickness of 0.2 mm, and an AC voltage of 800 V with a pulse of 30 kHz was applied to the resultant structure. Particles of aluminum used as an insulating layer can be seen in FIG. 7.

Please replace the paragraph beginning on Page 8, line 32, and ending on Page 9, line 4, with the following amended paragraph:

The above experiments show that luminous efficiency is largely increased when an electroluminescent device includes an electric field enhancing layer. If an electric field enhancing layer according to embodiments of the present invention is formed on an electrode contacting a dielectric layer, electric field enhancement can be obtained with a lower driving voltage. In addition, driving voltage for driving an electroluminescent device can be lowered by appropriately selecting a material for an insulating layer and reducing the thickness thereof.

Please replace the paragraph beginning on Page 9, line 5, with the following amended paragraph:

Such an electroluminescent device according to embodiments of the present invention can operate in a lower vacuum state with lower voltage than the conventional art, thereby increasing the life span of the device and decreasing the cost of manufacturing a conventionally costly driving circuit.